

01 DIM SUM DISHES DELIVERY

A Intelligent takeaway delivery service designed for Chinese dining experience for travelers on cruise ships.

Service design | Product design
Group work

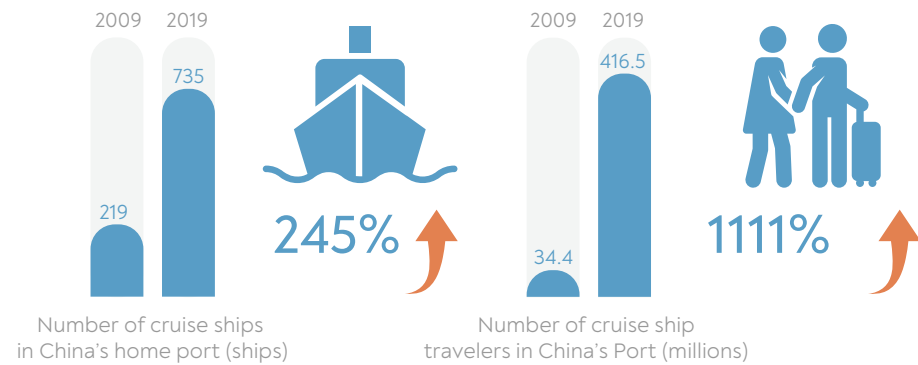
Member: Yifei Li, Liyuan Sun, Quan Zhou, Yuanning Zhang
Role: Arrangement, Data Investigation, Infographic design, UX design, Product & Stall design, Model renderings

Source: Participating in a workshop organized by the Institute Of Yacht Nautical Environment Design at Tsinghua University, our group completed a proposal for the promotion of Chinese food in the form of takeaway. I then iterated on the design and did the detailed product and space design independently and finally completed the perfect work.

BACKGROUND



With the rapid rise of the cruise market in China, more and more Chinese travelers choose to take cruises for taste of cuisines from around the world. But, these Chinese travelers often experience "culture shocks of food" on their cruise trips because the cruises operating in China were originally designed for the Western market.



OPPORTUNITY

Now as "home-build Chinese cruise ship" project rolls out, [how can we use design to improve the dining experience of Chinese travelers on cruise ships, and provide authentic Chinese food to customers from all over the globe?](#)

RESEARCH

Status of cooking in the galley



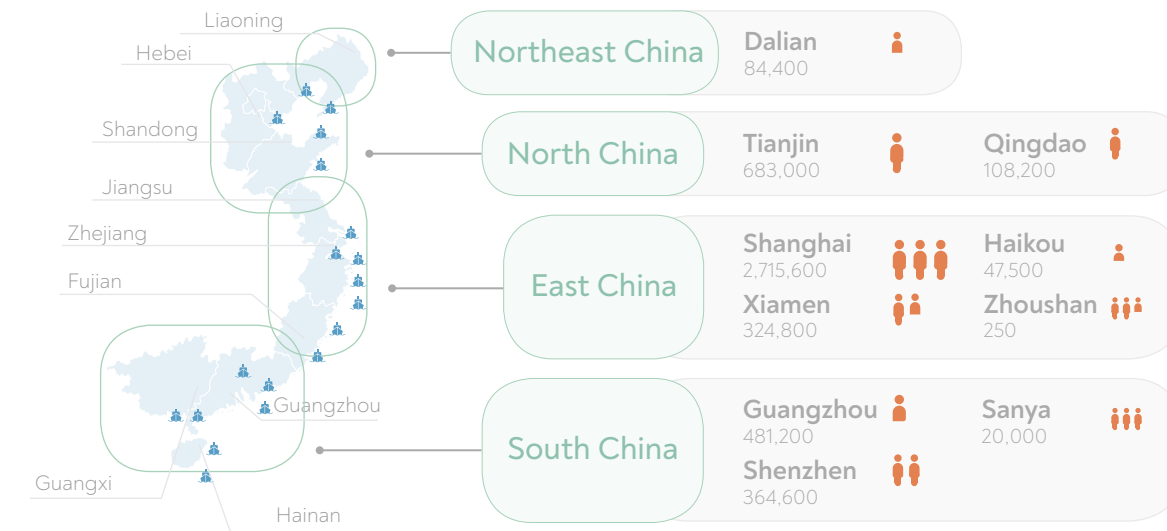
Basing on safety laws, **nothing is cooked on an open fire in the cruise ship galley.** However, without open flame, the Chinese food cooked by the chef with electricity will become less delicious. Especially, many foreign chefs on cruise ships do not know what real Chinese food recipes are.

Insight

We should avoid cooking Chinese food with electricity or reduce the cooking time of Chinese food on cruise ships.

Major cruise ports in china

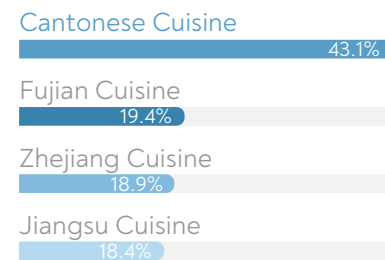
The location of China's cruise ports is **mainly concentrated on the southeast coast**, where there are the largest number of ports and travelers.



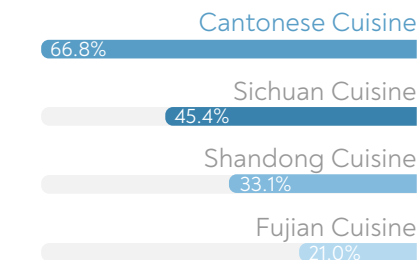
Types of Chinese food that cruise travelers like

Cantonese food is one of the most popular Chinese foods, and a **variety of dim sum dishes** which do not require open fires to cook are a key feature of this cuisine.

CHINA'S COASTAL AREAS



OVERSEAS



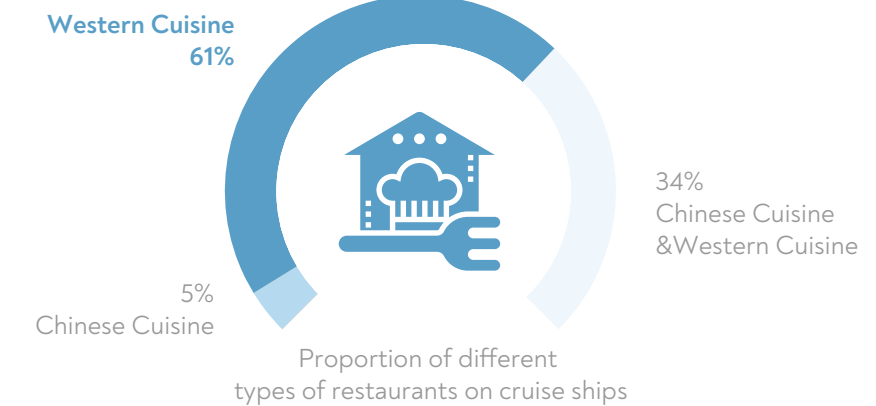
Double Skin Milk	Shrimp Dumpling	Claypot Rice
31.1%	32.3%	36.5%



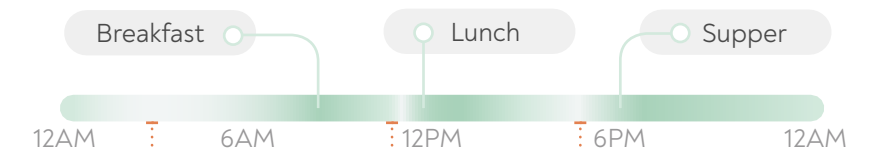
Siu Mai	Shrimp Dumpling	Pineapple Pork
32.9%	58.5%	61.8%

Status of cruise restaurants

I did a research on **the status of restaurants** on the Quantum of the Seas cruise ship, and **the current problems with the catering service**, and analyzed them.



Only 29.3% of tourists can fully adapt to the food on the cruise ship.



When customers are hungry, there is no place to eat!

The number of restaurants which are open: 3+ (green), 1-3 (light green), 0 (grey).

MSC Cruises President and CEO Gianni Onorato previously complained in the Financial Times that when Chinese tourists take a cruise trip, they eat almost every hour, saying that "there is no clear separation between breakfast, lunch and dinner".

Insight

- There are only a small number of Chinese restaurants that provide Chinese food on the cruise ship, so the choice for travelers is limited to Western food.
- The restaurants on the cruise ship have few opening hours, and travelers cannot eat at any time.

USER RESEARCH

Interview

We interviewed travelers who took a cruise trip before, so as to have a deeper view of the problems they encounter when eating on cruise ships.



Guobin Xu, 33 Years old, Architect

"When I took a cruise trip before, I was looking forward to tasting all kinds of delicacies from all over the world, but there were so many customers that I had to queue for a long time in the restaurants."

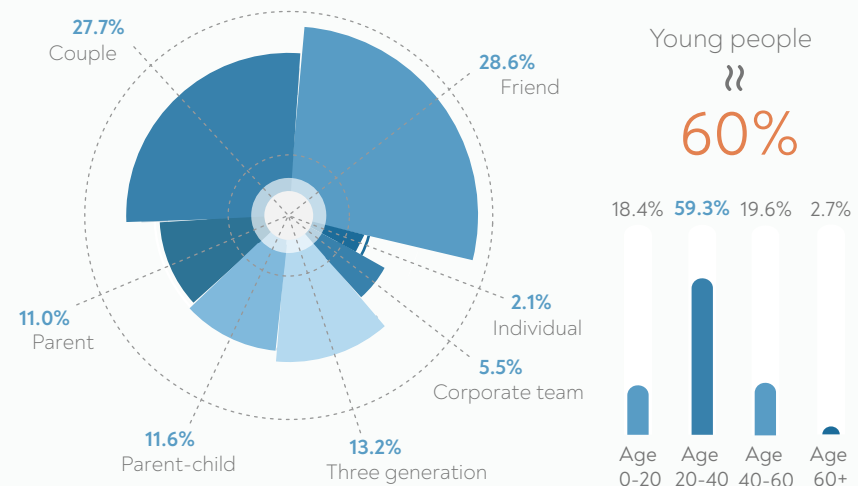


Jessie Chen, 22 Years old, Designer

"As a travel enthusiast, I always enjoy the entertainment life on cruise ships. So, I don't want to spend a lot of time on eating. I just hope that when I'm hungry after playing, I can order takeaway."

Questionnaire

In this survey, most of travelers are young people who traveled with their mates or friends.



Persona

Based on the research findings, I developed the user persona to guide my future design.



GROUP OF FRIENDS

- Jack&Leon 25, Designer
- Susan&Sarah 25, Journalist
- Amy 28, Engineer

Location: Shanghai, China

Feature:
Eat Chinese food.
Share life on social media.

"We are a group of young people who love life and enjoy travelling around the world and taking part in many interesting activities. Moreover, we enjoy the life of convenience. For example, as long as we are hungry, we can order takeaway at any time."

Frustrations

- The restaurant is closed when people want to eat.
- When people are entertaining, it is inconvenient to have no food delivery service.
- Young people may not be interested in traditional things.

Opportunity

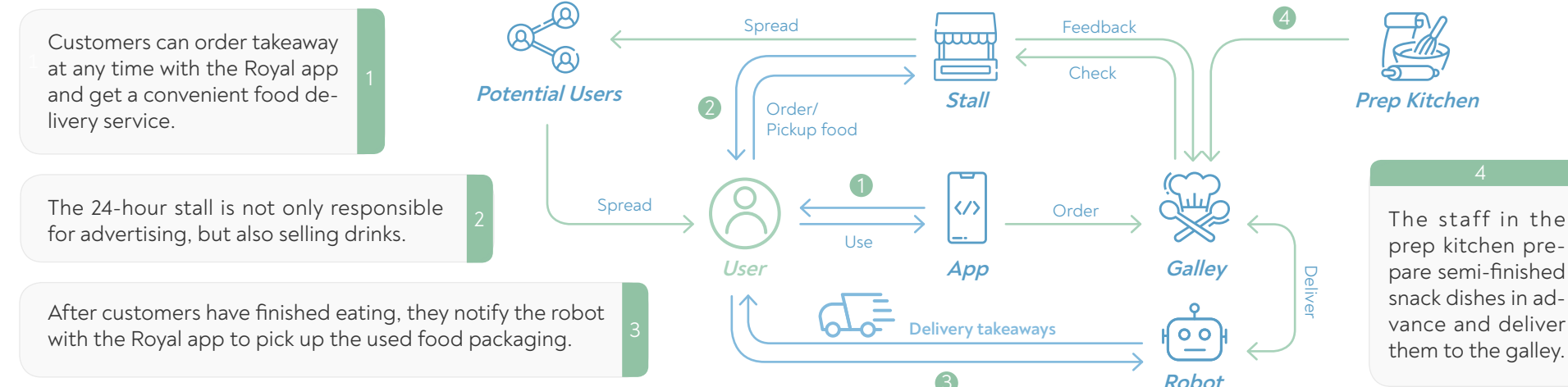
- The service of Chinese restaurants on cruise ships should tend to be more convenient and intelligent.

IDEATION

The above findings help us further meet the needs of a large number of young Chinese people and people who love Chinese food in other countries, and give them a better Chinese dining experience. **Based on the above analysis, we decided to create an intelligent dim sum delivery system that includes the following products.**



SYSTEM MAP



BUSINESS CANVAS

Key Partner	Key Activities	Value Positions	Customer Relationship	Customer Segment
Cruise company App development company Delivery robot company Supplier of semi-finished dim sum dishes Food packaging and robot factory	Takeaway service on App Design of takeaway food stall Design of delivery robot Packaging recycling system	We provide an intelligent delivery system that can use robots to complete takeaway deliveries to meet customers' eating needs. Also, we choose environmentally friendly materials to make tableware and food packaging, hoping that the robot would take back the used food packaging from the customer while delivering.	The takeaway stall is open 24 hours Robot delivery service Beverage service at the stall	People who need food delivery services Young people who are interested in new things People who are not fully adapted to western food
Key Resource Intelligent delivery system Semi-finished dim sum dishes			Channels App Takeaway stall Delivery robot and staff	
Cost Structure Construction and maintenance (Takeaway stall, platform, robots) Advertising Salaries (staff and chefs) Semi-finished dim sum dishes, tableware, food packaging and robot production			Revenue Streams Delivery service Beverage service at the stall Takeaway supply	

DIM SUM DISHES

Based on the research findings, we chose Cantonese dim sum dishes as the main food. In order to deliver food to customers quickly, we plan to purchase sufficient quantities of semi-finished dim sum dishes so that **galley chefs can cook these semi-finished dim sum dishes quickly within the specified time.**

START »



Order enough **high-quality semi-finished dim sum dishes.**



The semi-finished dim sum dishes are **stored in the cold room** on the second deck of cruise ships.



The staff take out the semi-finished dim sum dishes needed for the day from cold storage rooms, and **sort these dishes into the galley fridge.**

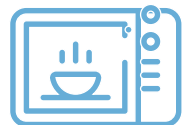
After customers submit the orders, **the classified semi-finished dim sum dishes will be cooked directly by the chef in the galley.**

Galley



Steaming

Steam over boiling water until the filling is cooked through.



Microwaving

Lay the dim sum dishes on a plate in the microwave, **sprinkle lightly with a little water and steam until the filling is heated through.**

 Millet Steamed Cake 6-8min	 Shrimp Dumpling 6-8min	 Cha Siu Bao 8-10min
 Nai Wong Bao 8-10min	 Walnut Bun 8-10min	 Steamed Dumpling 8-10min
 Siu Mai 8-10min	 Cream Custard Bun 8-10min	 Soup Dumpling 13-15min
 Steamed Spare Rib in Black Bean Sauce 8-10min	 Steamed Chicken Feet in Black Bean Sauce 8-10min	
 Lo Mai Gai 6-7min	 Cheung Fun 2-3min	 Robot

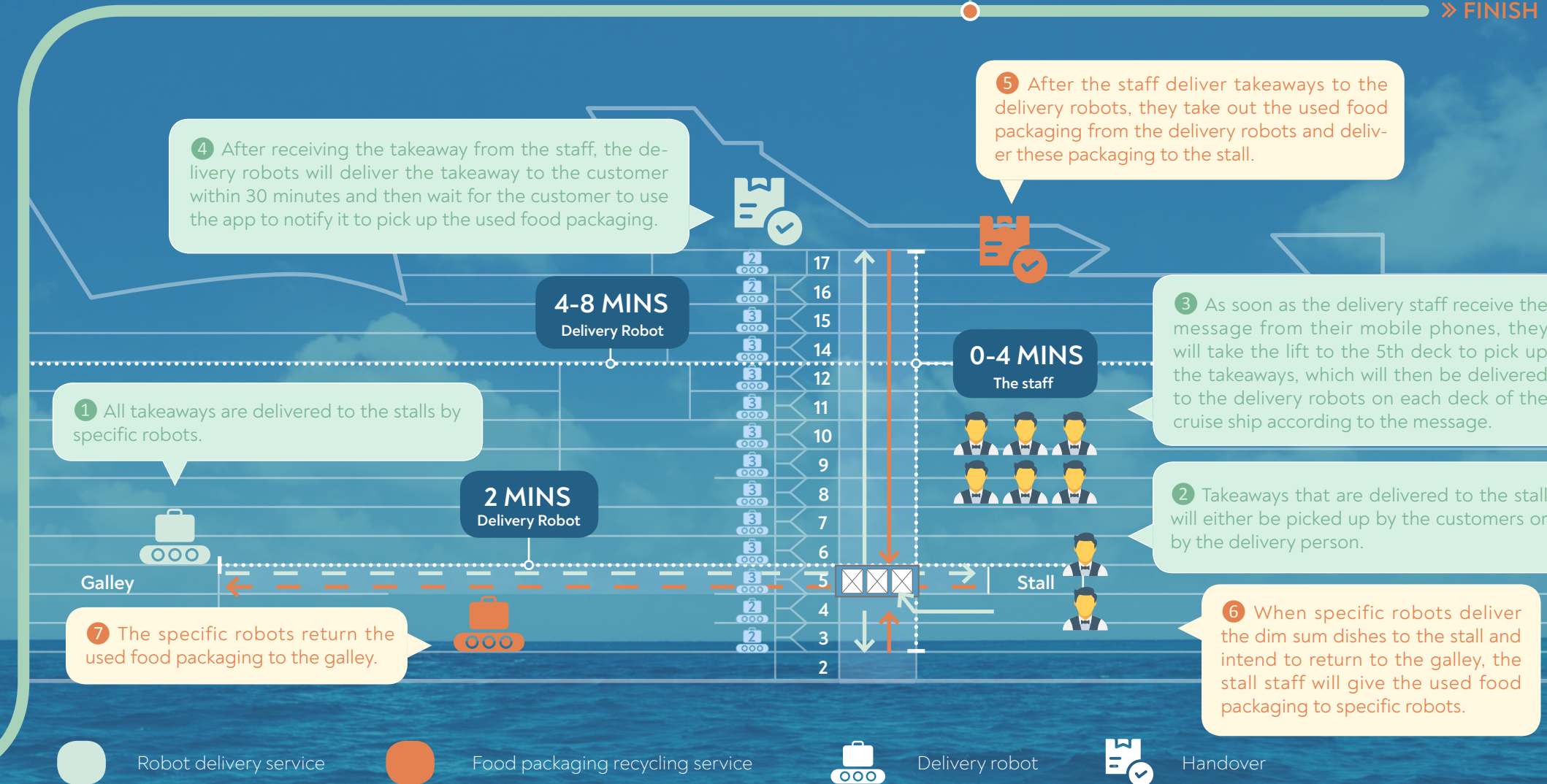
DELIVERY SYSTEM

Take the Oasis of the Seas as an example of a takeaway delivery system. The staff work with the robots to complete delivery tasks and ensure that all takeaways are delivered within 30 minutes.

60.5 BEAM IN METERS	72 HEIGHT IN METERS	361.6 LENGTH IN METERS
6780 GUEST CAPACITY	2200 ONBOARD CREW	18 TOTAL DECKS



» FINISH

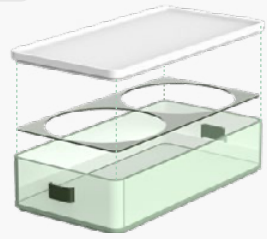


PRODUCT & STALL DESIGN

Food packaging

I designed 3 different types of reusable food packaging that are made from eco-friendly materials, and established a recycling system to scientifically clean the used food packaging.

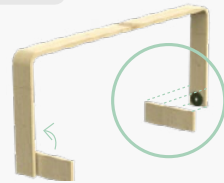
PP



Outer packaging

The green outer packaging represents environmental protection, it can be recycled many times.

Bamboo



Bamboo handle

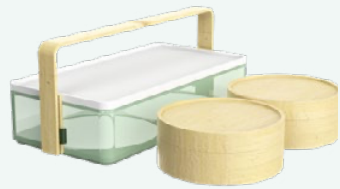
The bamboo handle is easy to remove from the outer packaging and can be rotated for use.

Bamboo

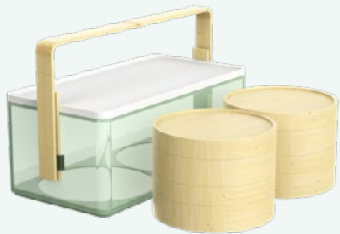


Bamboo steamer

It would be easier to deliver the dim sum dishes in a simple bamboo steamer.



For 1~2 person



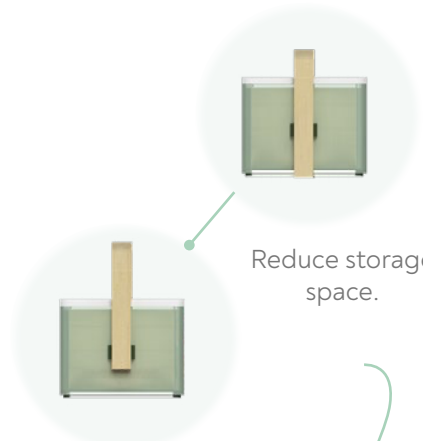
For 2~3 person



For 4~6 person

Delivery robot

I designed safe and heat-keeping intelligent food delivery robots with three types of capacity storage space inside the robot for food packaging, in order to ensure the needs of different customers.



Reduce storage space.

Enter the order number displayed on the Royal app on the touchscreen of the robot.

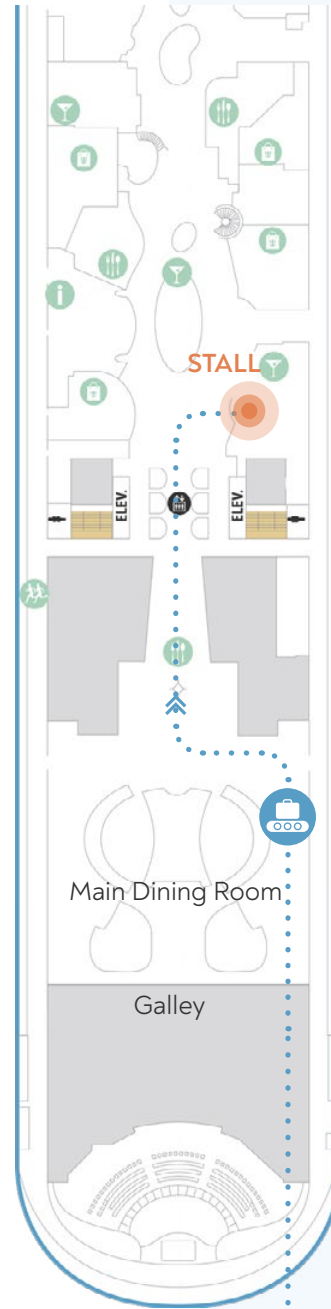


After customers finish the meal, they return the food packaging to the robot.

Dishwashing

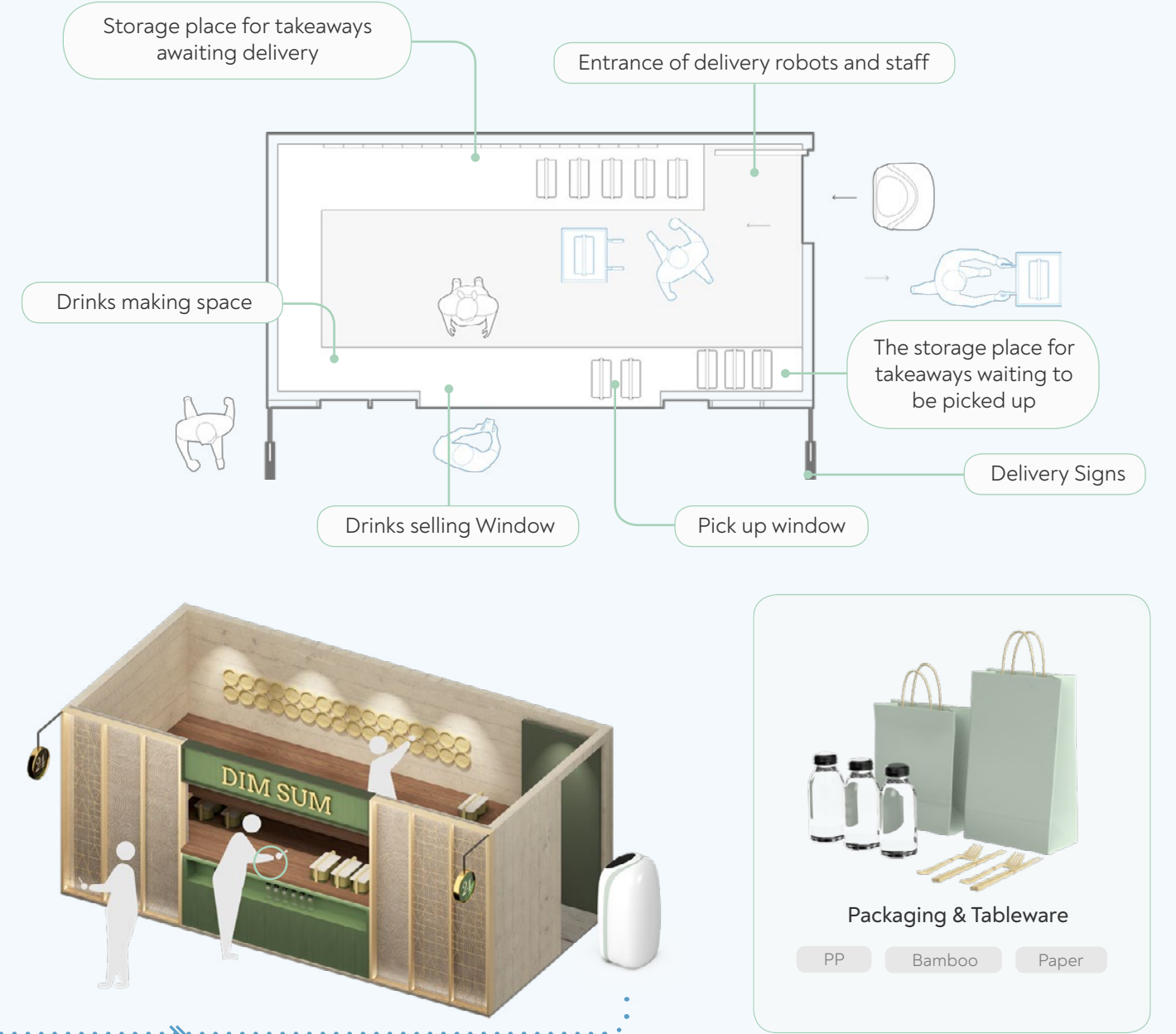
The robots deliver food packaging and tableware to the galley, where staff use a 3-sink dishwashing method to ensure objects are properly cleaned and ready for re-use.

1.2M



Takeaway stall

We decided to build a stall to replace the dining area and serve as a pick-up location, a drinks selling location and a staging area for delivery. This would easily reduce costs and leave a mark on people's travels.

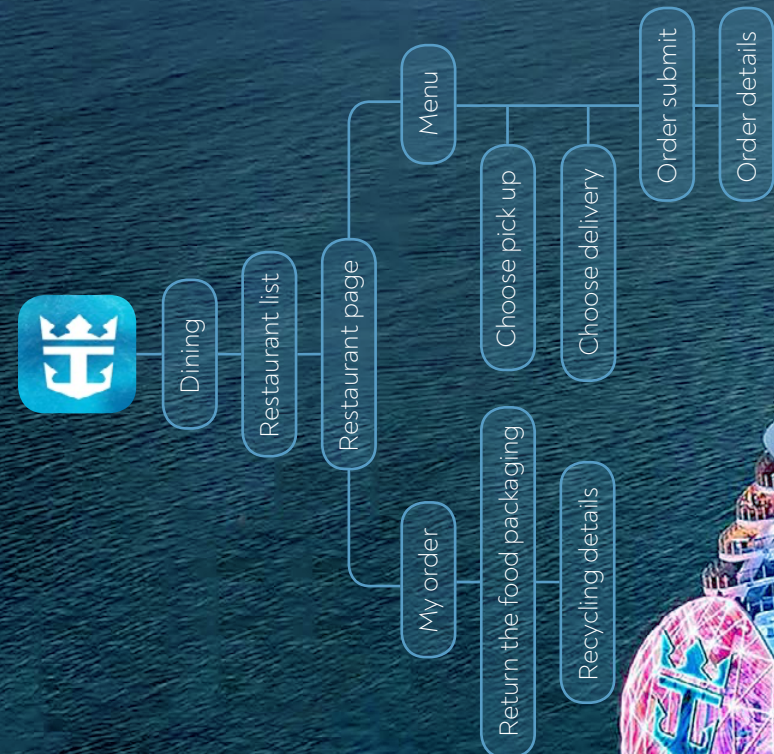


Packaging & Tableware

PP Bamboo Paper

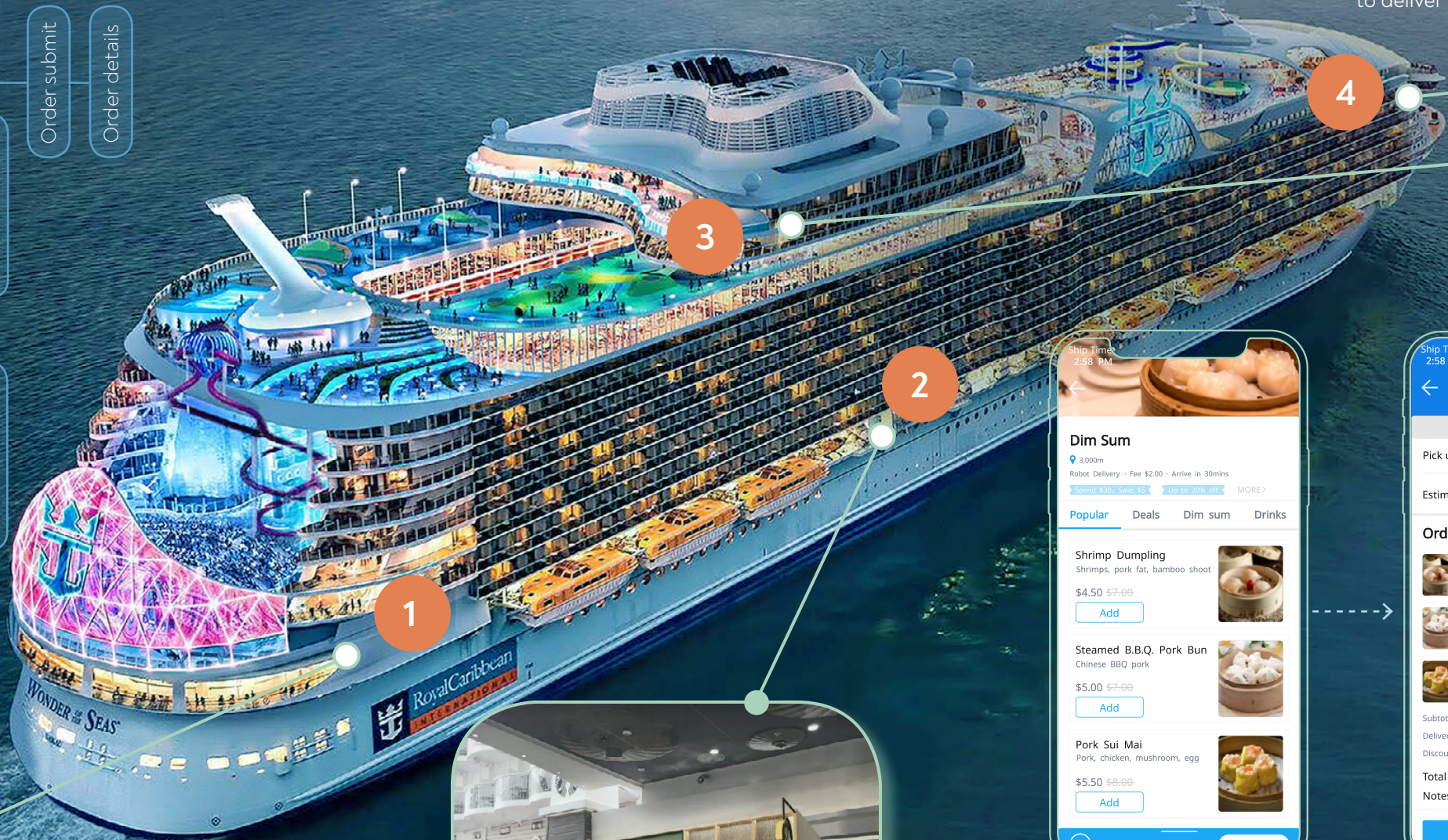
STORY BOARD

Internet on board is a paid service, so we chose the cruise line's official app as the ordering platform to access our customers. I designed the ordering interface on the basis of this platform. This design proposal features guaranteed meal delivery service within 30 minutes. Take the Wonder of the Seas (new Oasis-Plus class) as an example to introduce this platform.



COOKING IN GALLEY

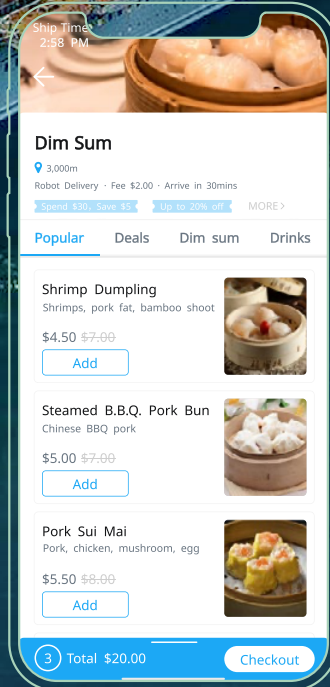
The chef receives the order information and starts cooking.



The Customers pick-up takeaway and buy drinks.

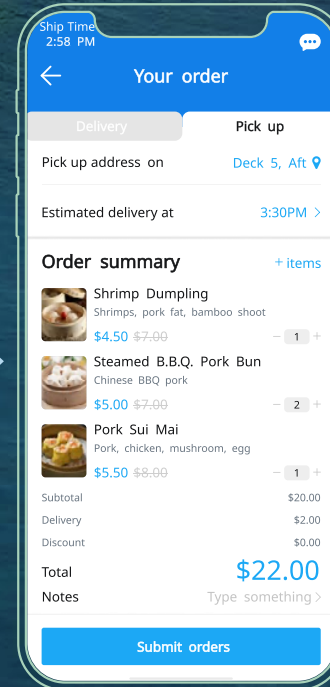


TAKEAWAY STALL



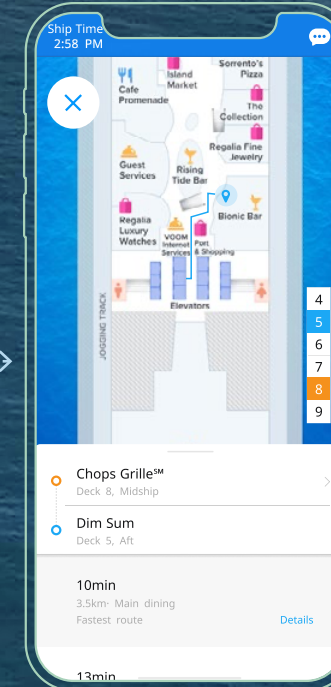
Restaurant menu

Add a takeaway service to the original Royal app, where customers can order takeaways from the Royal app.



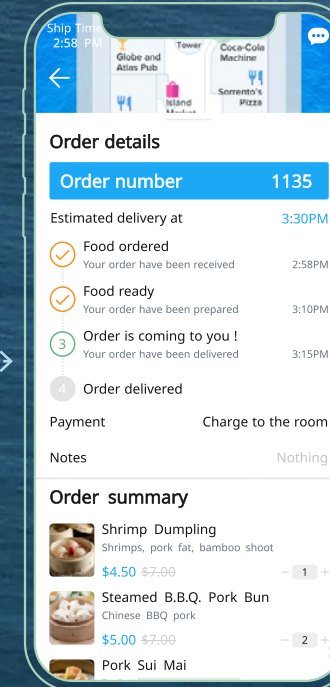
Submit orders

After the customers have set the delivery location and delivery time, they can submit their order after payment.



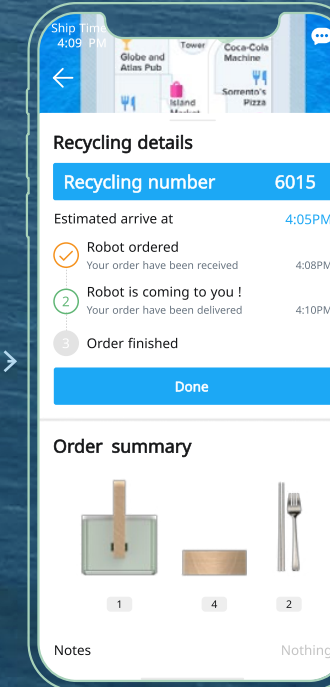
Deck maps

Customers can know in advance how far they need to pick up their takeaway by using Royal's app.



Order details

The page displays order details and order numbers to help customers get their takeaways smoothly.



Recycling details

Customers return all food packaging to the robot based on a detailed list of completed takeaway orders.

The robots is heading to the designated location to deliver food.



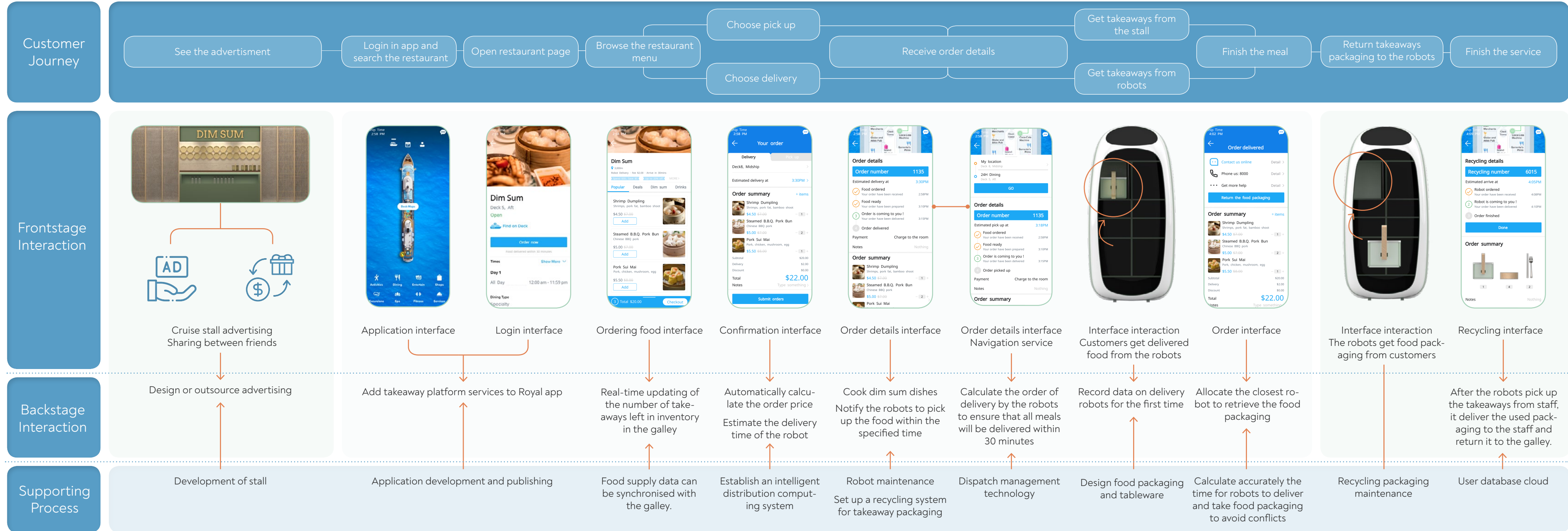
DELIVERY TAKEAWAYS



GETTING TAKEAWAYS

Customers get takeaways which are delivered by robots.

SERVICE BLUE PRINT



Customer Journey

Frontstage Interaction

Backstage Interaction

Supporting Process

See the advertisement

Login in app and search the restaurant

Open restaurant page

Browse the restaurant menu

Choose pick up

Choose delivery

Receive order details

Get takeaways from the stall

Get takeaways from robots

Finish the meal

Return takeaways packaging to the robots

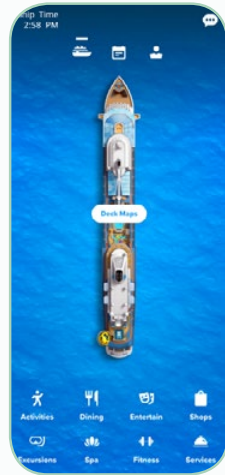
Finish the service



Cruise stall advertising
Sharing between friends

Design or outsource advertising

Development of stall



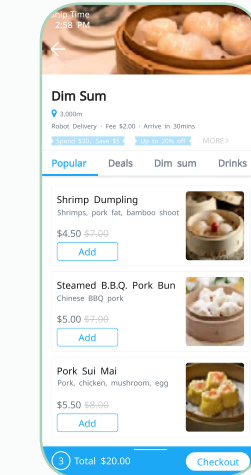
Application interface

Add takeaway platform services to Royal app

Application development and publishing



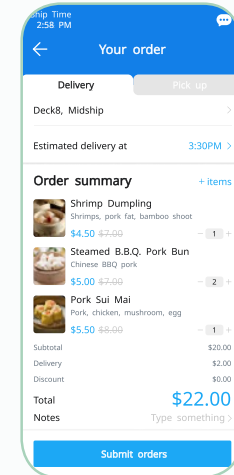
Login interface



Ordering food interface

Real-time updating of the number of take-aways left in inventory in the galley

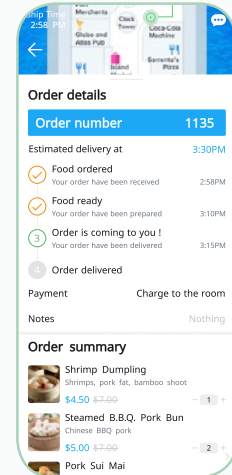
Food supply data can be synchronised with the galley.



Confirmation interface

Automatically calculate the order price
Estimate the delivery time of the robot

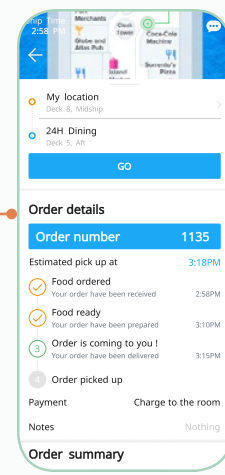
Establish an intelligent distribution computing system



Order details interface

Cook dim sum dishes
Notify the robots to pick up the food within the specified time

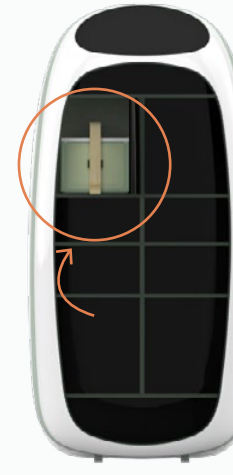
Robot maintenance
Set up a recycling system for takeaway packaging



Order details interface
Navigation service

Calculate the order of delivery by the robots to ensure that all meals will be delivered within 30 minutes

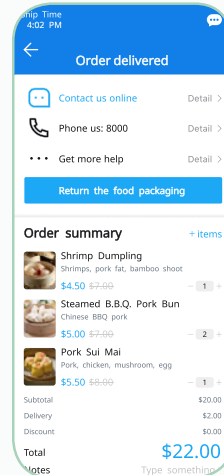
Dispatch management technology



Interface interaction
Customers get delivered food from the robots

Record data on delivery robots for the first time

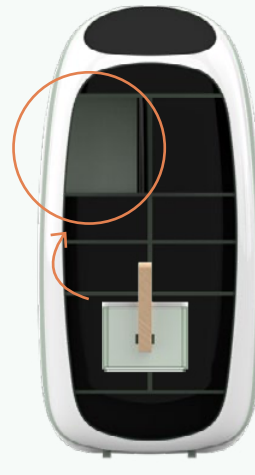
Design food packaging and tableware



Order interface

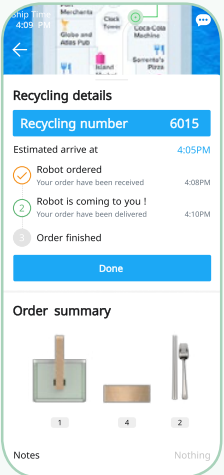
Allocate the closest robot to retrieve the food packaging

Calculate accurately the time for robots to deliver and take food packaging to avoid conflicts



Interface interaction
The robots get food packaging from customers

Recycling packaging maintenance



Recycling interface

After the robots pick up the takeaways from staff, it deliver the used packaging to the staff and return it to the galley.

User database cloud